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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND COMPOSITIONS FOR ENHANCING DEVELOPMENTAL POTENTIAL OF OOCYTES AND ZYGOTES

(57) Abstract: The invention relates to compositions and methods for enhancing the developmental potential of oocytes or zygotes by increasing intracellular levels of replicative mitochondria in the oocytes or zygotes. In one aspect of the invention, the intracellular levels of replicative mitochondria are increased by introducing replicative mitochondria into the oocytes or zygotes. The oocytes may be fertilized to obtain a zygote with increased intracellular levels of replicative mitochondria. The methods and compositions may be used to improve in vitro fertilization and embryo transfer methods, and nuclear transfer techniques.

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INTERNATIONAL SEARCH REPORT

Internat Application No

PCT/CA 00/01283

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N5/06 C12N5/08 C12N5/10 A01K67/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N A01K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>VAN BLERKOM JONATHAN ET AL: "Mitochondrial transfer between oocytes: Potential applications of mitochondrial donation and the issue of heteroplasmy." HUMAN REPRODUCTION (OXFORD), vol. 13, no. 10, October 1998 (1998-10), pages 2857-2868, XP001002313 ISSN: 0268-1161 cited in the application the whole document</p> <p style="text-align: center;">--- -/--</p>	1-5, 10

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents:

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- *X* document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- *&* document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>TAKEDA K ET AL: "Dominant distribution of mitochondrial DNA from recipient oocytes in bovine embryos and offspring after nuclear transfer."</p> <p>JOURNAL OF REPRODUCTION AND FERTILITY, vol. 116, no. 2, June 1999 (1999-06), pages 253-259, XP001002337</p> <p>ISSN: 0022-4251</p> <p>the whole document</p> <p>---</p>	1-33
A	<p>MORITA YUTAKA ET AL: "Oocyte apoptosis: Like sand through an hourglass."</p> <p>DEVELOPMENTAL BIOLOGY, vol. 213, no. 1, pages 1-17, XP002168146</p> <p>ISSN: 0012-1606</p> <p>the whole document</p> <p>---</p>	1-33
P,X	<p>PEREZ GLORIA I ET AL: "Further studies on the role of mitochondria in controlling oocyte apoptosis."</p> <p>BIOLOGY OF REPRODUCTION, vol. 62, no. Supplement 1, 2000, page 132</p> <p>XP001002323</p> <p>Thirty-Third Annual Meeting of the Society for the Study of Reproduction;Madison, Wisconsin, USA; July 15-18, 2000</p> <p>ISSN: 0006-3363</p> <p>the whole document</p> <p>-----</p>	1-33